1. A guide device for supporting a column having a ram inserted thereinto to allow relative axial movement between said column and said ram,

said ram having an outer circumferential surface of a polygonal-shaped cross section, said outer circumferential surface having a plurality of ram flat portions, each of said ram flat portions extending along an axial direction of said ram,

said column being disposed around said outer circumferential surface of said ram, said column having a through hole of a polygonal-shaped cross section, said through hole being formed of a plurality of column flat portions, each of said column flat portions corresponding to each of said ram flat portions,

a plurality of roller-shaped rolling elements being provided at each of said column flat portions of said through hole of said column, said rolling elements rolling on the corresponding ram flat portion,

a plurality of supporting shafts being provided in said column, each of said supporting shafts extending toward the direction perpendicular to the extending direction of each of said ram flat portions, each of said supporting shafts supporting each of said rolling elements rotatably.

2. The guide device of claim 1, wherein said rolling elements at said adjacent column flat portions of said through hole of said column are disposed at corners of said through hole.

3. The guide device of claim 1, wherein each of said supporting shafts is supported on both end portions thereof inside said column.

4. The guide device of claim 1, wherein each of said column flat portions of said through hole has a longitudinal groove formed thereon, said longitudinal groove extending toward the extending direction of each of said column flat portions, said rolling elements being received in said longitudinal groove.

5. The guide device of claim 1, wherein said ram has a central hole, said central hole having a first spiral groove formed on an inner circumferential surface thereof, a screw shaft having a second spiral groove formed on an outer circumferential surface thereof, said screw shaft being inserted into said central hole of said ram, a thin-walled, cylindrical retainer being interposed between said inner circumferential surface of said central hole of said ram and said outer circumferential surface of said screw

shaft, said cylindrical retainer supporting a plurality of balls rotatably, said balls rolling on both said first spiral groove of said ram and said second spiral groove of said screw shaft.

6. The guide device of claim 2, wherein each of said supporting shafts is supported on both end portions thereof inside said column.

7. The guide device of claim 2, wherein each of said column flat portions of said through hole has a longitudinal groove formed thereon, said longitudinal groove extending toward the extending direction of each of said column flat portions, said rolling elements being received in said longitudinal groove.

8. The guide device of claim 2, wherein said ram has a central hole, said central hole having a first spiral groove formed on an inner circumferential surface thereof, a screw shaft having a second spiral groove formed on an outer circumferential surface thereof, said screw shaft being inserted into said central hole of said ram, a thin-walled, cylindrical retainer being interposed between said inner circumferential surface of said central hole of said ram and said outer circumferential surface of said screw

shaft, said cylindrical retainer supporting a plurality of balls rotatably, said balls rolling on both said first spiral groove of said ram and said second spiral groove of said screw shaft.

9. The guide device of claim 4, wherein said longitudinal groove has an oil retaining member inserted thereinto.

10. The guide device of claim 7, wherein said longitudinal groove has an oil retaining member inserted thereinto.

11. A guide device for supporting a cylindrical column having a solid cylindrical ram inserted thereinto to allow relative axial movement between said column and said ram,

said ram having an outer circumferential surface of a circular-shaped cross section,

said column being disposed around said outer circumferential surface of said ram, said column having a through hole of a circular-shaped cross section, said through hole extending axially,

said through hole of said column having a plurality of pockets formed on an inner circumferential

surface thereof, a roller-shaped rolling element and a supporting shaft for supporting said rolling element being provided in each of said pockets, said rolling element rolling axially on said outer circumferential surface of said ram.

12. The guide device of claim 11, wherein said rolling element has a concavely curved cylindrical surface, a radius r of curvature of a generating line of said cylindrical surface satisfies an inequality;

$$0.52D \leqq r \leqq 0.58D$$

wherein D is a diameter of said outer circumferential surface of said ram.

13. The guide device of claim 11, wherein said rolling element has a cylindrical surface with a linear generating line.

14. The guide device of claim 11, wherein said rolling element includes a first rolling element and a second rolling element, said first rolling element having a concavely curved cylindrical surface, a radius r of curvature of a generating line of said cylindrical surface of said first rolling element satisfying an inequality;

$$0.52D \leqq r \leqq 0.58D$$

wherein D is a diameter of said outer circumferential surface of said ram, said second rolling element having a cylindrical surface with a linear generating line.

15. The guide device of claim 11, wherein said pockets are formed at least at an opening of said through hole of said column and spaced equally circumferentially on said inner circumferential surface of said through hole.

16. The guide device of claim 11, wherein said supporting shaft is inserted into a supporting hole formed in each of said pockets inside said column and is supported on both end portions in each of said pockets.

17. The guide device of claim 11, wherein a thin-walled, cylindrical member is interposed between said ram and said column, said cylindrical member having a plurality of apertures corresponding to said pockets of said column, said cylindrical member being adapted to bear a radial load.

18. The guide device of claim 16, wherein said supporting hole penetrates an outer circumferential surface of said column.

19. The guide device of claim 17, wherein said cylindrical member is formed of bearing materials.